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1 Introduction

The purpose of this document is to give a detailed description of the requirements for the “Apple Retail” System. It will illustrate the purpose and complete declaration for the development of system. It will also explain system constraints, interface and interactions with other external applications.

2 General

2.1 Identification

Project Title: <Apple Retail System>

2.1.1 Revision History

Date	Description	Author	Comments
<11/20/2015>	<Version 1>	<Raghad Ali>	<First Revision>

2.1.2 Document Approval

The following Software Requirements Specification has been accepted and approved by the following:

Signature	Printed Name	Title	Date
	< Raghad Ali >	<Student>	
	<Albatoul Al-Thinayan>	<teacher>	

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2.2 Definitions

Apple company agent: Apple employee that is responsible of the products licenses, retailer: the seller of Apple products in the kingdom.

2.3 References

1) http://www.apple.com/

2) http://www.apple.com/legal/internet-services/itunes/us/terms.html

3) https://en.wikipedia.org/wiki/Apple_ID

4) Systems and software engineering — Life cycle processes — Requirements engineering

2.4 Acronyms and abbreviations

ARS: Apple Retail System

DFD: Data Flow Diagram

2.5 Elicitation Techniques

Three elicitation techniques have been used in this System which are data collection, interview and questionnaire.

2.5.1 Data Collection

We have collected data to help us understand the system in general and its requirement. By visiting webpages about Apple products and commercial licenses. Also we collect data about Apple products retailers to help us know the common prices in the kingdom and how different the prices are from the prices in the mother company.

2.5.2 Interview

We have interviewed with multiple students at our university that have Apple products, the questions of the interview were:

1) Do you think that Apple Retail System will help people to get the right prices from the retailers in the kingdom?
   The Apple Retail System is helpful for the people or person who wants to buy new Apple products, because they don't need to go to the mother company or one of its branches outside the kingdom and in the same time they will buy the products with the right prices from authorized retailers.
2) Is it hard to get the authorized retailers from the system?
   No, it is because customer just need to click a button and a table of authorized retailers will be shown.
3) Is it possible for the customer to search if a certain retailer with specified information is an authorized or an unauthorized retailer?
   Yes, but he/she can search depend on one parameter: name, address, license date or class.
4) How can a retailer get a license?
   It is easy, he/she visit our system first login as a retailer and ask for a license.

5) How can an Apple company agent give a license?
   It is easy, he/she visit our system first login as an Apple agent, see the requests from the retailers and decide to give or not to give a license for each request.

2.5.2.1 Interview results:

Apple Retail System is built for the people to have the level of trust during buying an apple product from a retailer in the kingdom. They could just spend several minutes to get a table of the authorized retailers, or to search if a certain retailer is authorized or not. And the system is built for the retailer to easily get a license for their products from the Apple mother company. Finally the operations of the system will be easy to use from all the users of the system.

2.5.3 Questionnaire:

This questionnaire was set up on 15/11/2015, during these weeks, attended by 50 people in the solution of this the questionnaire, were published the questionnaire link to Facebook and Google+ groups to get the most amount of results, the questionnaire was specified to the people with apple product or the people who wants to buy an apple product, the majority ensures that the existence of a system that provide the customers with the authorized retailers is very helpful and prevent the retailers in the kingdom from cheating with the prices of the products.

The questionnaire was published using Google docs as illustrated in the figure below:

https://docs.google.com/forms/d/1hAk1D15XXQDw0ltMFtzHbjzIEya8tt9l05TDwzIAFcA/viewform

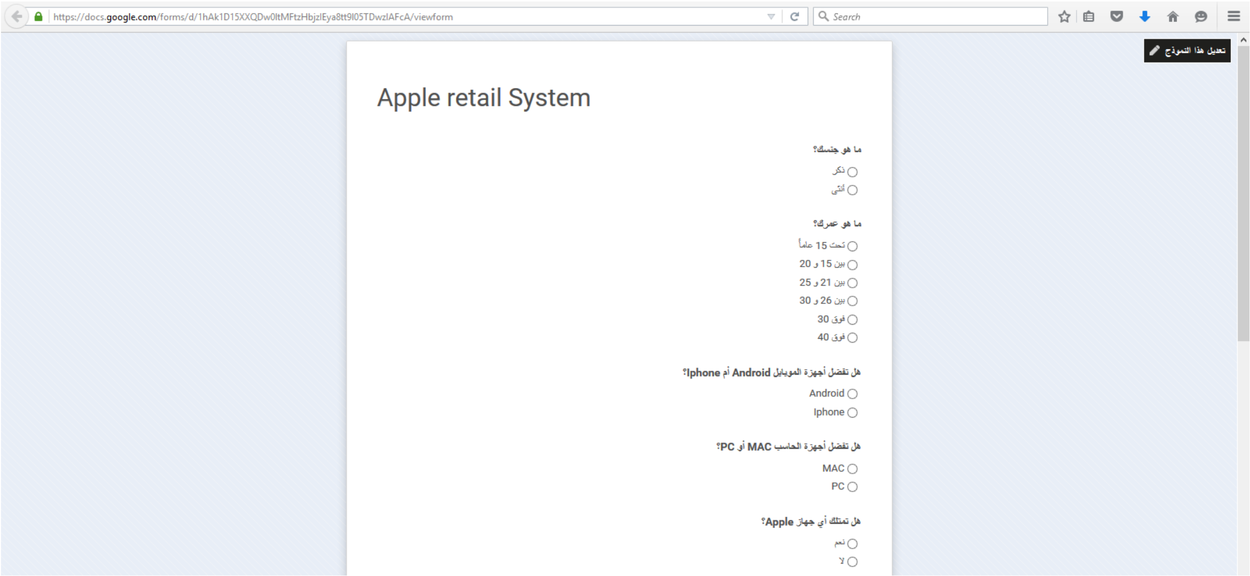

Figure 1 Questionnaire 1

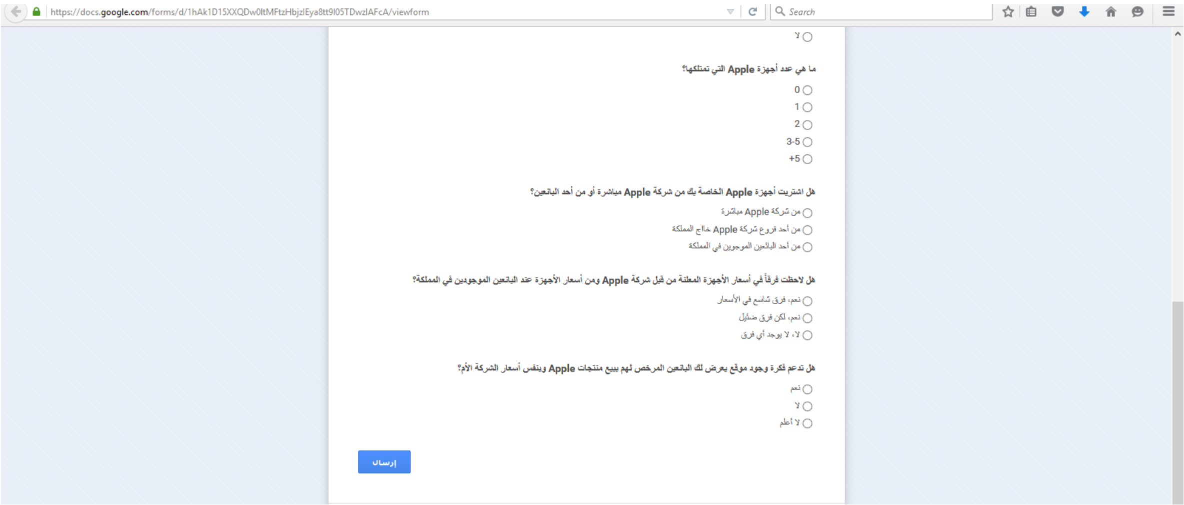

Figure 2 Questionnaire 2

3 Stakeholder requirements specification (StRS) document

3.1 Business purpose

The main purpose of the system is to distribute the Apple products from the mother company in America to its retailers in Saudi Arabia and to enable the users to display authorized retailers that have all Apple product with same price as the mother company.

3.2 Business scope

A) Apple Retail System

B) The range of business activities is that refers in how the system contact with the Apple company, how the system contact with the retailers and how the people use the system to know the authorized retailers.

3.3 Stakeholders

1) Apple Company agent: this user will be able to provide the system with the license to sell its products.
2) Retailer: this user will be able to ask for the license to sell its products.
3) Client: this user will be able to display and search for the authorized that have all Apple product with same price as the mother company.

3.4 Goal and Objective

3.4.1 Goal

The goal of the “Apple Retail System” is to ensure that the retailers don’t cheat the customers with apple product prices.

3.4.1 Objective

The main objective of this system is to build a software for the retailers to get the license from the Apple Company and for the people to get the authorized retailers in the kingdom.

3.5 Business processes

The following figures illustrate business process in “Apple Retail System”:

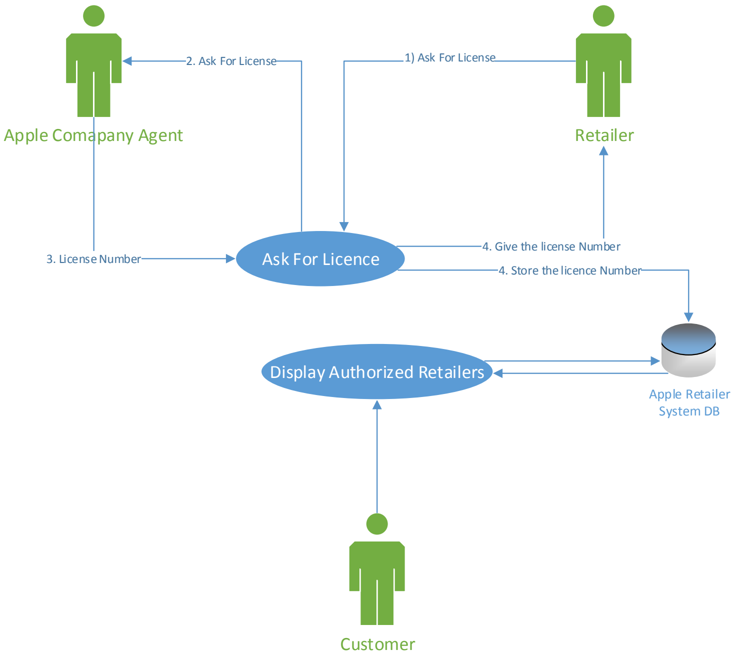

Figure 3 DFD

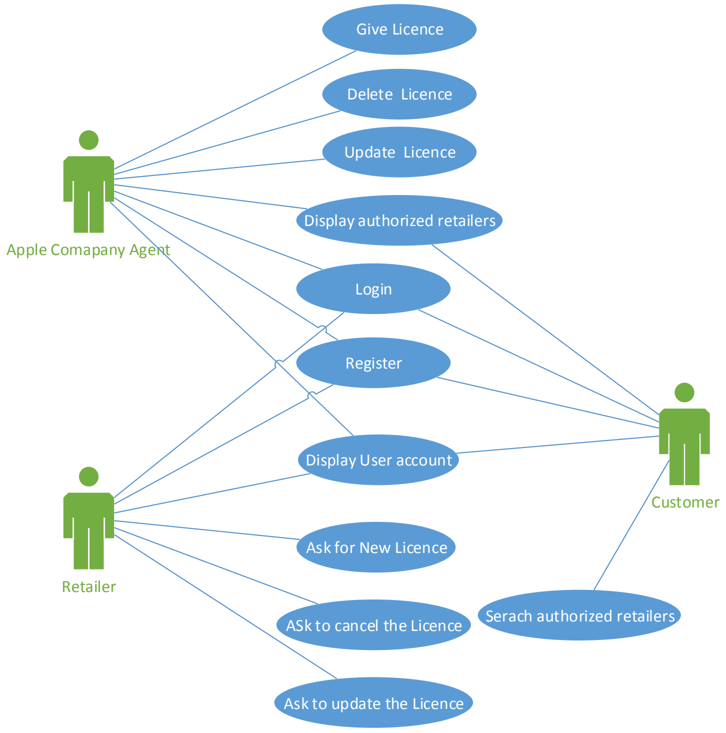

Figure 4 Use Cases

1. Login Process
This process ensures that only authorized users can use the system services. An authorized user is a user who has an account on the system. Users include Apple Company agents, retailers, and customers. The user must type a valid username and password to access the ARS.

2. Register Process
This process enable the new user (the guest) to register in the system. The User can register as an Apple Company agents, retailer, or a customer, the user must enter his/her information to complete the registration process.

3. Give License
This process ensures that an Apple Company agent can add a new license for a new retailer

4. Delete License
This process ensures that an Apple Company agent can cancel (withdraw) a license from a retailer.

5. Update License

This process ensures that an Apple Company agent can update a retailer license.

6. Ask for new License
This process ensures that a retailer can ask for a new license from the Apple Company.

7. Ask to cancel a License
This process ensures that a retailer can send a cancel license request.

8. Ask to Update a License

This process ensures that a retailer can send an update license request

9. Display authorized retailers:

This process ensures that the Apple Company agent or the customer can display a list of the authorized retailers.

10. Search authorized retailers:

This process ensures that the customer can display search if a certain retailer is authorized or not.

11. Display user account:

This process enable any type of users to see his/her account information.

3.6 Business operational constraints

1) Registration: The user creates an account on the system to be able to log in using e-mail (or name) and password to carry out other operations.

2) Apple Company agent Registration: The agent registration should be from only an authorized employee from the Apple Company, the system should ensure this operation using security certificates.
3) Commercial register: every retailer that won't to get a license from the ARS should have a commercial registration at the kingdom.

3.7 Business operational quality

It qualifies the business operation as of giving the customer an authorized retailer, the system will not choose the retailer on what they are or who they may be during the operation it will always depend if the retailer is authorized or not.

3.8 Business structure

A project organization is a structure that facilitates the coordination and implementation of project activities. Its main reason is to create an environment that fosters interactions among the team members with a minimum amount of disruptions, overlaps and conflict, project organization is also to study if the project is feasible or not so we decide whether we build our project or not.

The organization structure of the project is in the following figure:

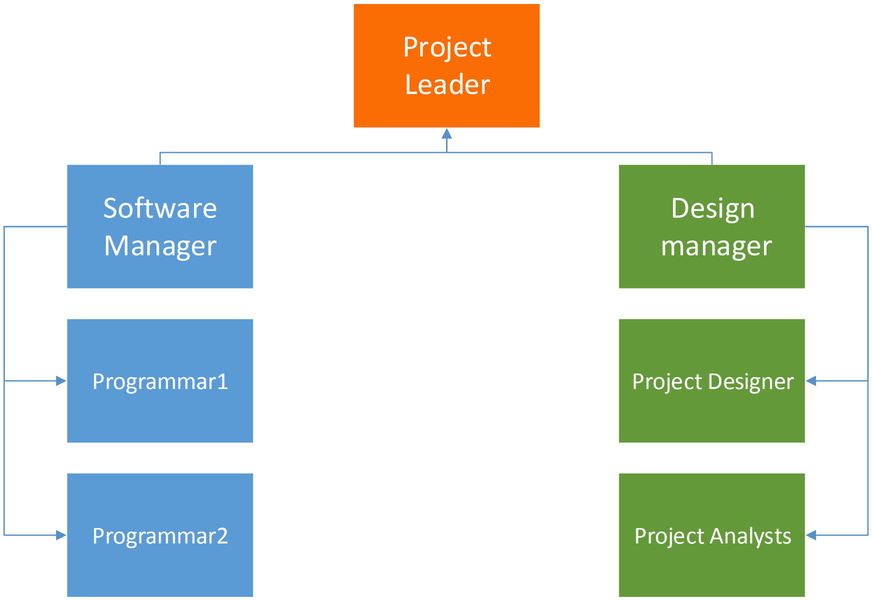

Figure 5 Project Organization

The project responsibilities are:

1. Project Manager: Leads project team responsible for the project.
2. Software Leader: Responsible for managing the team of 6 people does the analyzing, the design and the implementation of the software.
3. Two programmers: Responsible for writing programming code.

4. Project Designer: Responsible for designing the project user interfaces.
5. Project Analysts: Elicit the requirements of the system.

3.9 User requirements

In this section we will show the requirements that every type of users need to perform through the use of the system:

1) Apple Company Agent:
   - The Agent shall be able to display the retailers’ requests for a license: add, update or delete.
   - The Agent shall be able to give a license.
   - The Agent shall be able to reject a retailer request for a license.
   - The Agent shall be able to delete a retailer license.
   - The Agent shall be able to update a retailer license.
   - The Agent shall be able to display the authorized retailers.
   - The Agent shall be able to create an account on the system.
   - The Agent shall be able to log in.
   - The Agent shall be able to retrieve their password if they forget it.
   - The Agent shall be able to ask any question if they have any problem or concern.
   - The Agent shall be able to display his/her account details.
2) Retailer:
   - The Retailer shall be able to ask for a license.
   - The Retailer shall be able to ask to delete his/her license.
   - The Retailer shall be able to ask to update his/her license.
   - The Retailer shall be able to create an account on the system.

- The Retailer shall be able to log in.
- The Retailer shall be able to retrieve their password if they forget it.
- The Retailer shall be able to ask any question if they have any problem or concern.
- The Retailer shall be able to display his/her account details.

3) Customer:

- The Customer shall be able to display the authorized retailers.
- The Customer shall be able to search if a certain retailer is authorized or not.
- The Customer shall be able to create an account on the system.
- The Customer shall be able to log in.
- The Customer shall be able to retrieve their password if they forget it.
- The Customer shall be able to ask any question if they have any problem or concern.
- The Customer shall be able to display his/her account details.

3.10 Description of the proposed system

Saudi Arabia does not have Apple stores, and the prices are different between the sellers. The system helps to distribute the Apple products from the mother company in America to its retailers in Saudi Arabia. The retailer contact with the mother company through the system to get the license to sell its products. The system enables the users to display authorized retailers that have all Apple product with same price as the mother company

3.11 Operational scenarios

In this section we will describe some examples of how users might interact with the system:

1) Retailer enter the system for the first time:
    - First enter the system.
    - Register in the system as a retailer by creating a new account with the user email and a password.
    - The system sends a confirmation message to the user email
    - The user click on the confirmation message.
    - The system create the account.

- The system show the main page to the user.

2) Customer ask to display the authorized retailers:
    - First customer login to the system.
    - Customer ask for the authorized retailers.
    - The system show a table that contains the authorized retailers.

3.12 Project constraints

Project Schedule: This project will be done and submitted in February 20th 2016.

Cost: 100,000 SR.

4 System requirements specification (SyRS) document

4.1 System purpose

ARS project purpose is to build a computerized system that help customers to find the authorized retailers in the kingdom.

4.2 System scope

"Apple Retail System" is a system which is useful to customers to provide them with the authorized retailers in the kingdom and useful for the retailers that want to get licenses from Apple Company.

4.3 User characteristics

Defining the characteristics of the predicted users will help us in our decision about the functionality, design and content to include in our system. The primary audience for the "Apple Retail System" are: the Apple company agents, retailers and customers.

We identify the following characteristics of the Apple Company agent:

- The nationality of the agent is probably American.
- The age of the agent will be between 20 and 60.
- Agents are probably well educated people.
- Agents have a lot of knowledge in the license field.

We identify the following characteristics of the retailer:

- The majority of retailers had at least some college education.
- The age of the retailer will be between 20 and 60.
- Retailers have a little bit of knowledge in the license field.

We identify the following characteristics of the customer:

- The majority of customers had at least some college education.

- The age of the customer will be between 12 and 60.
- Customers are familiar with smart phones, especially Apple ones.
- Customers have a little bit of knowledge of the license.

4.4 Functional requirements

4.4.1 System Requirements

1. The Apple Company Agent:

1.1 The Agent shall be able to give a license.

1.1.1. The system shall be able to receive the license number.
1.1.2. The system shall be able to save the license number.
1.1.3. The system shall be able to put agent number.
1.1.4. The system shall be able to put date of license creation and date of license expiration.

1.2 The Agent shall be able to create an account.

1.2.1. The system should provide create account button in the main page.
1.2.2. The system should provide a registration page with Agent's information fields.
1.2.3. The system should send an email to verify Agent's email.

1.3 The Agent shall be able display authorized retailers.

1.3.1. The system should view all authorized retailers in a table.

2. The retailer:

2.1 The retailer shall be able to ask for a license.

2.1.1. The system shall be able to send a license request.
2.1.3. The system shall be able to put agent number.
2.1.3. The system shall be able to put date of license request
2.1.4. The system shall be able to put license prices for retailers.

2.2 The Retailer shall be able to create an account.

2.2.1. The system should provide create account button in the main page.
2.2.2. The system should provide a registration page with retailer's information fields.
2.2.3. The system should send an email to verify retailer's email.

3. The Customer:

3.1 The Customer shall be able to search for authorized retailers

3.1.1. The system should provide a search box in the main page.
3.1.2. The system should provide retailer name, license date, address, class fields in the search box.
3.1.3. The system should view all authorized retailers with the same searched information.

3.2 The Customer shall be able to create an account.

3.2.1. The system should provide create account button in the main page.
3.2.2. The system should provide a registration page with Agent's information fields.

3.2.3. The system should send an email to verify Agent's email.

3.3 The Customer shall be able display authorized retailers.

3.3.1. The system should view all authorized retailers in a table.

4.5 Usability requirements

The ARS will ensure the following usability requirements:

- The user should know how to use a computer.
- The system is easy to use by different types of users (apple company agents, retailers and customers).
- The system require the least amount of input from the users.
- Every user input will be validated and Error messages will be displayed if the user enters an invalid value.
- Easy and well-structured user manual will be provided.

4.6 Performance requirements

The ARS will ensure the following performance requirements:

- Response time: The application shall correctly output all results and alerts without disruption.
- User friendly: The system is easy to use and understand.
- Interactivity: The system provides the user with graphical user interface.

4.7 System interfaces

The user interfaces are divided into two major components. One part includes the user accessing the system using the login form. The other involves using the system by different type of users. The system should provide three different user interfaces one for the Apple company agent, one for the retailer and one for the customer.

The diagram below illustrates the four major functionalities. These functionalities will be displayed depending on the user.

The login interface:

Figure 6 login Interface

The Apple Agent retailers' requests management interface:

Figure 7 Apple Agent Interface

The Retailer license management interface:

Figure 8 Retailer Interface

The Customer display and search for authorized retailers interface:

Figure 9 Customer Interface

4.8 System Operations

4.8 .1 Human system integration requirements

The ARS will ensure the following human system integration requirements:

- Identify the system that balances optimal performance with minimal total ownership cost.
- Ensure that the system is built to accommodate the customers population
- Ensure that equipment and facilities will operate, maintain and support the system.

- There should be a quick response for the retailer when he/she asks for a license and for the customer when he ask for the authorized retailers.

4.8.2 Maintainability

The ARS will ensure the following **Maintainability** requirements:

- The system source code will be kept well-structured.
- The system source code will be well-documented.
- All the changes to the system shall be documented.

4.8.3 Reliability

The ARS will ensure the following **reliability** requirements:

- The system should be capable of processing many license requests within a certain time with no errors.
- The system should be available and all the time 24 hours 7 days.

4.9 Physical requirements

The ARS will ensure the following **physical** requirements:

- An ordinary PC or laptop with an Internet connection. Since the system fetches data from the database over the Internet and from the Apple Company agent.
- Database server to save the retailers' licenses and user accounts information.

4.10 Adaptability requirements

The ARS will ensure the following **adaptability** requirements:

- Scalability: the system must be scalable in the number of customers and retailers, so we can add more users in the future
- Backup: use backup database in the case of main database failure

4.11 Environmental conditions

The following environmental conditions should be encountered by the system:

- Save the environment by reducing the usage of papers that is needed to sign the license agreement between Apple and the retailers and alternatively use a digital license agreement that the system provide.
- Electromagnetic signal: because the system use the network connectivity, so the data that transmit through the network will be affected by Electromagnetic signal.
- Self-induced environment parameters like noise will affect the system because the network connectivity too.

4.12 System security

The ARS will ensure the following security requirements:

- Confidentiality: the passwords of the system users should be encrypted.

- Integrity: the integrity of the Apple Company agent should be authenticated using security certificates.
- Availability: the system should be available 24/7.
- Access control: the system should automatically log out all passengers after a period of inactivity.

4.13 Information management

The ARS will ensure the following system management of information requirements:

- The types of information the system will send and receive is: Apple product licenses.
- The amount of information the system will send and receive depend on the number of the different types of users in the system.
- The system information will be also store in a backup database to ensure the availability.

4.14 Policies and regulations

The ARS will ensure the following policy requirements:

- The system should be supported in a multi-language like Arabic, English and French.
- The system should tell me if there available license or not.
- The system should provide backup of the database.
- The system should show the information for each user.
- The system don't allow Repetition of license on the same day.

4.15 System life cycle sustainment

The ARS will ensure the following activities:

- A statistical study on the number of the authorized retailers relatively to the unauthorized ones every month, which show us the usage of the system by retailers.
- A statistical study on the number of the customers that used the system every month, which show us the usage of the system by customers.